

## NOTES ON JUNCUS.

By R. S. ADAMSON.

Some additions to and corrections of the "Revision of the South African Species of *Juncus*" published in 1935 (Journ. Linn. Soc. Bot. L. 1) are now put on record. These are concerned mainly with the annual species of the series "graminifolii" where one new species is described, one other is added to the list, and the available descriptions of others amplified. Some extensions of range are recorded.

The species are referred to by the numbers used in the "Revision." For several notes on localities in the Transvaal I am indebted to Dr. J. Burt-Davy.

6. *J. acutus* L. Malmesbury Div., near Darling. Adamson 487.

7. *J. Kraussii* Hochst. This species which was not previously recorded to the north of Table Bay is not uncommon along the coast at least as far as Saldanha Bay. Adamson 488.

10. *J. oxycarpus* E. Mey. Burt-Davy 17358 is from Amersfoort, Wakkerstroom Div.; Burt-Davy 17694 is from Heidelberg, Vereeniging Div.

13. *J. exsertus* Buchen. Nelson 320 is from Ysterspruit, Potchefstroom, not from E. Transvaal.

14. *J. rostratus* Buchen. By error the Transvaal localities were placed under Swaziland. The plant is represented from that territory by Rogers 13.

15. *J. lomaphyllus* Spreng. var. *congestus* Adamson. Wilms 1565 is from Lydenburg.

16. *J. viridifolius* Adamson. Krakadouw Peak, 5500 ft., Cederberg Range (Adamson 462). This is a considerable extension of the known range.

20. *J. indescritus* Steud. Rehmann 5742 is from Houtbosch, Pietersburg. Dr. Burt-Davy informs me that the Stoltz collections were made in S.W. Tanganyika, not in Nyassaland.

28a. *J. obliquus* Adamson, n. sp. Annua, parva, 1—3 cm. alta. *Caules* tenues foliis basilaribus filiformibus duplo longiores, basin et vaginae rubescentes. *Capitulum* unicum pseudolaterale vel subterminale. *Flores* 1—4, parvae, c. 2 mm., castaneae. *Bractae* omnes hypophyllinae, membranaceae, castaneae, floribus breviores. *Tepala*

externa distincte breviora, acuta, interna involuta plus minusve obtusa. *Stamina* tria, tepalis internis opposita et triplo breviora. *Antherae* subrotundae filamentis breviores. *Stylus* brevis. *Capsula* perianthio brevior, rotundato-trigona, ferruginea, mucronata. *Semina* parva obovata.

Banks of temporary streams among mosses. Ebenezer, Cold Bokkeveld Mountains, Ceres Div., Cape Province. Adamson 1139 (type), Levyns 5791. A small annual with an external resemblance to a *Scirpus*. Stems are usually solitary.

A very distinct species owing to the pseudolateral inflorescence, brown scarious bracts, short outer perianth, three stamens with short rounded anthers, and short style. The plant is most nearly related to *J. capitatus* Weig. but very different.

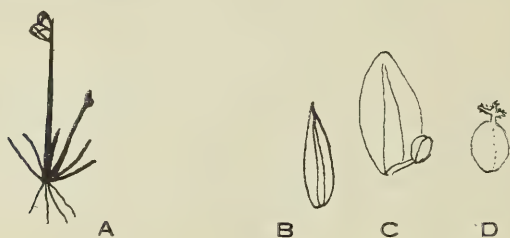


FIG. 1. *J. obliquus*, Adamson. A. Complete plant (nat. size). B. External perianth segment.  $\times 10$ . C. Internal perianth segment with stamen.  $\times 10$ . D. Capsule at time of flowering.  $\times 10$ .

29. *J. cephalotes* Thunbg. This species appears to have a wider range and to penetrate further inland than was known. New localities are: Ceres Div., Ceres, Levyns 4707; Cold Bokkeveld Mts., Adamson 1119; Tulbagh Div., Roodesand Kloof, Adamson 1013; Bredasdorp Div., The Poort, Levyns 4510; Vogel Vlei, Levyns 4547; Robertson Div., Eendragt, Levyns 313.

32. *J. pictus* Steud. This plant which was hitherto known only from Drège's specimens appears to be rather abundant in suitable localities, by streamlets between 4,000 and 5,000 ft., in the Kamiesberg. Adamson 1467, 1469, 1488. An examination of a series of specimens has made possible a completion and amplification of the description.

Stems 10—15 cm. much exceeding the narrow, usually glaucous leaves. Inflorescence of 1—3 heads each 5—8-flowered. Flowers pale, c. 5 mm. Perianth dark at tip or with a dark central spot, external much shorter acuminate almost aristate. Stamens equalling outer

perianth with anthers much longer than filaments. Style long, stigmas pale exserted. Capsule as long as outer perianth, red brown, trigonous with rounded angles, blunt, shortly but distinctly mucronate. Seeds yellow oval, shortly apiculate, with pale margin. Flowers Dec.—Jan.

34. *J. polytrichus* E. Mey. and Buchen. This had been re-found at Leliefontein, Adamson 1492. It is apparently rare. A much smaller plant than *J. pictus*; flowers 3—3.5 mm. red-brown. External perianth slightly shorter acute. Stamens two-thirds perianth with short filaments. Capsule half to two-thirds perianth, rounded, bluntly three-angled, apiculate. Seeds pale brown broadly oval, not margined,

35. *J. filifolius* Adamson. Near Bottelary and Sarepta. Acock.

36. *J. scabriusculus* Kunth. A re-examination of the material of this species has been undertaken owing to the discovery of specimens growing by a stream on the Nardouw Mountains near Clanwilliam (Adamson 1412) which show several points of difference from the descriptions though with a general resemblance. The Nardouw plants agree very closely with Buchenau's figure and description of *J. subglandulosus* Steud., which was founded on a part of Drège 8795. This number comprises two gatherings, the larger plant was taken by Steudel as the type of *J. subglandulosus*. The specimen, a single plant, is immature and was regarded on examination and comparison as a growth or habitat form of the commoner *J. scabriusculus* (Rev. 36). The new gathering (Adamson 1412) which was abundant and quite uniform exhibits several decided differences from *J. scabriusculus*, notably in an unequal perianth and short rostrate capsule. Kunth (Enum. Pl. III 304) in his original description says of *J. scabriusculus* "*J. bufonio maxime affinis*." This might be applicable to the common form but is certainly not the case with these Nardouw plants. The differences are such that they should be classed as a separate species. As they agree so closely with Buchenau's figures (much more closely than does the specimen from which they were made) the name *J. subglandulosus* as emended by Buchenau may be revived for them. Neither Steudel nor Buchenau had seen a mature plant in which the most distinctive characters are shown. The amended description is:—

36a. *J. subglandulosus* Steud. emend Buchenau (amplified). Steudel Syn. Pl. Glum. II, 303, 1841; Buchenau Monog. Junc. v. Cap. 459 Taf. VI 1875; *J. scabriusculus* Kunth var. *subglandulosus* Buchen. Engler. Bot Jahrb. XII 458, 1890; Baker Fl. Cap. VII 22, 1897.

Annual, 20—25 cm., subglaucous. Leaves and sheaths reddish, much shorter than stem. Inflorescence umbellate. Heads 1—6 (occasionally 8), central sessile, others stalked. Stalks 1—2 cm. occasionally with 2 heads. Heads 6—10-flowered. Flowers pale, 4—5 mm. Lowest

bract shortly leaflike, others membranous, cuspidate, shorter than the flowers. Perianth unequal, external shorter, distinctly keeled. Stamens 6, two-thirds perianth, anthers white, filaments very short. Style long. Capsule yellow-brown, rounded trigonous with depressed sides, distinctly apiculate or rostrate, about equal to external perianth. Seeds rounded.

Streamsides on clay soils. Nardouw Mt., Clanwilliam, Adamson 1412; Piquetberg, Drège 8795 p. pt.

The main differences between the two species may be tabulated :—

<i>scabriusculus</i>	<i>subglandulosus</i>
Perianth equal, thin.	External perianth longer, keeled.
Stamens half perianth.	Stamens two-thirds perianth.
Anthers yellow, filaments short.	Anthers white, filaments very short.
Capsule cylindric-trigonous, blunt or retuse, very shortly mucronate.	Capsule rounded, distinctly rostrate.
Stems 5—15 cm.	Stems 20—25 cm.

The range of *J. scabriusculus* has been extended by its discovery near Bredasdorp. (The Poort, Levyns 4451.)

38. *J. rupestris* Kunth. Cold Bokkeveld Mts., Ceres. Adamson 447.

39. *J. umbellatus* Adamson. Sarepta, Stellenbosch. Acock.

The addition of two species to the list and the completion of the description of others renders some modification of the key to the species in the series "*graminifolii annui*" necessary and the following is given as an alternative :—

- A. Heads pseudolateral or oblique, 1 or few. Stamens 3.
  - B. External perianth longer, aristate. Flowers pale 28. *J. capitatus*.
  - BB. External perianth shorter, acute. Flowers dark.. 28a. *J. obliquus*.
- AA. Heads terminal, one or many. Stamens 6.
  - B' Internal perianth distinctly longer
  - C. Heads with 6 or more flowers.
    - D. Anthers equalling filament. Flowers dark .. .. 30. *J. inaequalis*.
    - DD. Anthers longer than filament. Flowers pale.
      - E. External perianth keeled, pale. Seed round .. .. 36a. *J. subglandulosus*.
      - EE. External perianth not keeled, dark at tip. Seed ovate, margined .. .. 32. *J. pictus*.
  - CC. Heads with 1—4 (occasionally 5) flowers.
    - D' Very small. Heads solitary. Flowers pale. Capsule equalling perianth, mucronate .. 33. *J. parvulus*.
    - D'D' Taller. Heads 1—3. Flowers brown. Capsule shorter than perianth, apiculate .. 34. *J. polytrichus*

- B'B' Internal perianth equalling or shorter than the external.
- C' Internal perianth acuminate . . . . 31. *J. Sprengelii*.
- C'C' Internal perianth involute, more or less obtuse.
- D' Style at least as long as ovary.
- E' Heads with many flowers, 5 or more.
- F Flowers dark. Leaves flat broad . . . . 29. *J. cephalotes*.
- FF Flowers pale. Leaves narrow or filiform.
- G. Flowers 4—7 mm. Plant glaucous. Capsule blunt or shortly mucronate . . . . 36. *J. scabriusculus*.
- GG. Flowers 3—4 mm. Plant reddish. Capsule distinctly mucronate . . . . 35. *J. filifolius*.
- E'E' Heads few flowered, 1—4, rarely 5.
- F' Leaves flat. Inflorescence umbellate . . . . 39. *J. umbellatus*.
- F'F' Leaves filiform. Inflorescence cymose . . . . 38b. *J. rupestris* var. *Schlechteri*.
- D"D" Style very short or none.
- E" Heads 8—15-flowered. Flowers pale . . . . 37. *J. diaphanus*.
- E"E" Heads 1—3-flowered. Flowers brown . . . . 38. *J. rupestris*.
-